

AMENDMENTS TO THE CLAIMS:

The following listing of claims replaces all prior listings of claims in the present application.

What is claimed is:

1. **(Currently Amended)** A liquid crystal display panel comprising:
a pair of substrate structures having plural pixels where an image is produced,
liquid crystal filling a gap between said pair of said substrate structures and selectively making said pixels dark and bright for producing said image,
column spacers formed on one of said substrate structures of said pair and held in contact with the other of said substrate structures, the ratio of the total contact area between said column spacers and said other of said substrate structures to the total area occupied by said plural pixels being within the range from 0.050 percent to 0.150 percent, at least one of said column spacers being formed within a matrix of said plural pixels, said matrix of said plural pixels being formed by rows and columns of said plural pixels, and
a sealing layer formed between said matrix of said plural pixels and a peripheral area, and
a reservoir formed between said substrate structures for preventing said pair of substrate structures from increasing said gap by accumulating part of said liquid crystal,
wherein no column spacers are formed in an area of said sealing layer, and
wherein the liquid crystal display panel is an In-Plane-Switching display panel.
2. **(Original)** The liquid crystal display panel as set forth in claim 1, in which said column spacers are respectively associated with said pixels.

3. (Canceled)

4. (Previously Presented) The liquid crystal display panel as set forth in claim 1, further comprising additional column spacers formed outside said matrix of said plural pixels, said additional column spacers being formed in said peripheral area.

5. (Canceled)

6. (Previously Presented) The liquid crystal display panel as set forth in claim 2, in which said column spacers are formed in one of said substrate structures, and switching transistors, pixel electrodes respectively connected to said switching transistors and a common electrode are incorporated in the other of said substrate structures.

7. (Original) The liquid crystal display panel as set forth in claim 6, further comprising a sealing layer formed around said plural pixels and reinforced with spacers.

8. (Previously Presented) The liquid crystal display panel as set forth in claim 7, in which said spacers are spherical and have a diameter expressed as

$$DM = (A + B + 2C + D + E + F + G) - H - B - E$$

$$-F - G = A + D + 2C - H$$

where DM is the diameter of said spacers in micron, A is a thickness of color filters formed on said one of said substrate structures in micron, B is a thickness of an overcoat layer covering said

color filters in micron, C is a thickness of orientation layers respectively covering said overcoat layer and a passivation layer over said switching transistors and said pixel electrodes in micron, D is a height of said column spacers in micron, E is a thickness of said passivation layer in micron, F is a thickness of a gate insulating layer forming parts of said switching transistors in micron, G is a thickness of gate electrodes forming other parts of said switching transistors in micron and H is a thickness of a black matrix covered with said color filters in micron.

9. (Original) The liquid crystal display panel as set forth in claim 8, in which an actual diameter of said spacers is equal to or less than the sum of said diameter DM and 2 microns.

10. (Original) The liquid crystal display panel as set forth in claim 1, in which each of said column spacers is associated with pixels selected from said plural pixels.

11. (Original) The liquid crystal display panel as set forth in claim 10, in which said column spacers are classified into two groups one of which is taller than the other of said two groups.

12. (Canceled)

13. (Previously Presented) The liquid crystal display panel as set forth in claim 10, further comprising additional column spacers formed outside said matrix of said plural pixels, said additional column spacers being formed in said peripheral area.

14. (Original) The liquid crystal display panel as set forth in claim 1, in which said liquid crystal exerts a pressure lower than the atmospheric pressure on the inner surfaces of said substrate structures while any electric power is not applied thereto in room temperature.

15. (Currently Amended) A process for fabricating a liquid crystal display panel, comprising the steps of:

- a) preparing a pair of substrate structures having column spacers;
 - b) assembling the substrate structures of said pair in alignment with one another for creating a gap therebetween, the assembled substrate structure providing a reservoir between said substrate structures for preventing said pair of substrate structures from increasing said gap by accumulating part of said liquid crystal;
 - c) injecting liquid crystal into said gap;
 - d) evacuating part of said liquid crystal from said gap so as to make a pressure exerted on the inner surfaces of said substrate structures lower than the atmospheric pressure;
- and

e) confining the remaining part of said liquid crystal in said gap, in which said column spacers formed in one of said substrate structures are held in contact with the other of said substrate structures for creating said gap, and the ratio of total contact area between said column spacers and said other of said substrate structures to the area occupied by pixels is within the range between 0.050% to 0.150%, at least one of said column spacers being formed within a matrix of said pixels, said matrix of said pixels being formed by rows and columns of said pixels, wherein no column spacers are formed in an area of a sealing layer formed between said matrix of said plural pixels and a peripheral area, and

wherein the liquid crystal display panel is an In-Plane-Switching display panel.

16. **(Original)** The process for fabricating a liquid crystal display panel as set forth in claim 15, in which pressure ranging from 0.01 N/m^2 to 6 kN/m^2 is applied to said substrate structures in said step b).

17. **(Previously Presented)** The process for fabricating a liquid crystal display panel as set forth in claim 15, in which said step b) includes the sub-steps of:

b-1) roughly aligning said substrate structures in non-contact state,

b-2) bringing said substrate structures into contact with one another, and

b-3) exactly aligning said substrate structures with one another under application of pressure ranging from 0.01 N/m^2 to 6 kN/m^2 .

18. **(Original)** The process as set forth in claim 15, in which force is exerted on said substrate structures for evacuating said part of said liquid crystal in said step d).

19. **(Canceled)**

20. **(Previously Presented)** The liquid crystal display panel as set forth in claim 1, wherein:
the reservoir is integrally formed between said substrate structures; and
the reservoir is adapted to accept a part of said liquid crystal from between said pair of substrate structures to prevent increasing said gap.

21. **(Previously Presented)** The liquid crystal display panel as set forth in claim 20, wherein the reservoir is adapted to accept a part of said liquid crystal from between said pair of substrate structures to prevent increasing said gap during a period of one of high external temperature and local direct pressure.

22. **(Previously Presented)** The process as set forth in claim 15, wherein:
the reservoir is integrally formed between said substrate structures; and
the reservoir is adapted to accept a part of said liquid crystal from between said pair of substrate structures to prevent increasing said gap.

23. **(Previously Presented)** The process as set forth in claim 15, wherein the reservoir is integrally formed between said substrate structures; and , wherein the reservoir is adapted to accept a part of said liquid crystal from between said pair of substrate structures to prevent increasing said gap during a period of one of high external temperature and local direct pressure.

24. **(Currently Amended)** A liquid crystal display panel comprising:
a pair of substrate structures having plural pixels where an image is produced;
liquid crystal filling a gap between said pair of said substrate structures and selectively making said pixels dark and bright for producing said image;
column spacers formed on one of said substrate structures of said pair and held in contact with the other of said substrate structures, at least one of said column spacers being formed within a matrix of said plural pixels, said matrix of said plural pixels being formed by rows and columns of said plural pixels;

a sealing layer formed between said matrix of said plural pixels and a peripheral area; and
a reservoir integrally formed between said substrate structures and adapted to accept a
part of said liquid crystal from between said pair of substrate structures to prevent increasing said
gap, and

wherein the liquid crystal display panel is an In-Plane-Switching display panel.